

Water Wheel Motor

FIELD OF THE INVENTION

The technical solution refers to the equipment for change of hydro-energetic potential of water flow to mechanical energy with the possibility of further transformation of the energy into another form.

BACKGROUND OF THE INVENTION

At the present, there are many types of equipment used in the world for transformation of hydro-energetic potential of water flow to mechanical energy, with the possibility to transform this energy into another form. According to their design and method of energy transformation, they are divided into water wheels and water turbines.

Water wheels are actuated by upper, middle and lower drive. Water wheels with upper drive use the potential energy of water. They are of the bucket type of water wheels, rotating between an upper and lower water level. Water from the upper level flows into buckets and turns a wheel by gravitational force. Water flows out into the lower level. For water wheels with upper drive, a water level difference from 3 m to 12 m produces a water flow rate from  $0.3 \text{ m}^3\text{s}^{-1}$  to  $1.0 \text{ m}^3\text{s}^{-1}$ .

Water wheels with middle and lower drive are paddle type water wheels, with a rotation axis above the lower level, and water wheel paddles take energy from the water by wading in a lower flow created by streaming water coming from the upper level. A water wheel with a middle drive uses the potential energy and the kinetic energy of water streaming between the water wheel paddles approximately at the level of the water wheel rotation axis. Examples of water wheels with a middle drive include Sagebien, Zuppinger and Piccard wheels. Water wheels with lower drive use only the kinetic energy of water flowing between the water wheel paddles in the tangential direction at the lower part of the water wheel. An example of a water wheel with lower drive is the Poncelet wheel.

Water wheel paddles are plane or slightly bent in the plane perpendicular to the water wheel rotation axis. For water wheels with middle and lower drive, a difference

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